

# BookletChart<sup>TM</sup>

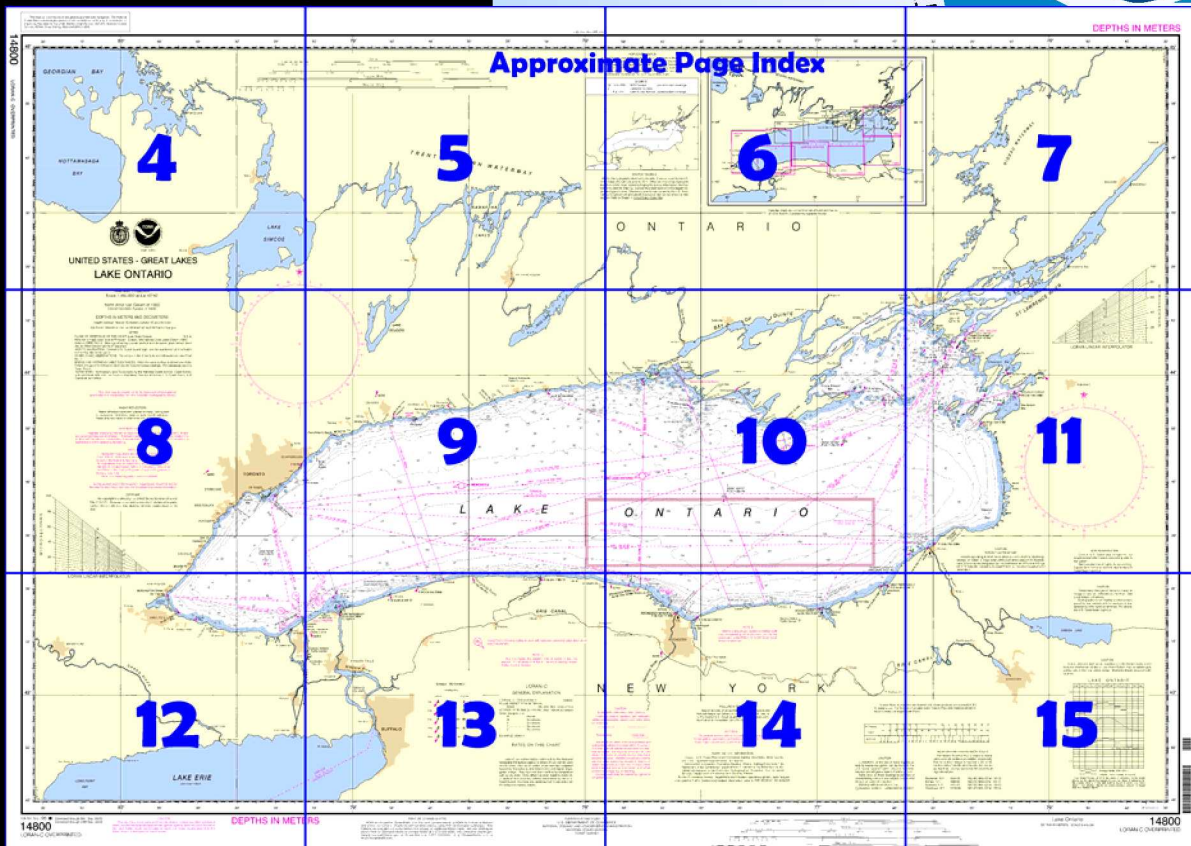
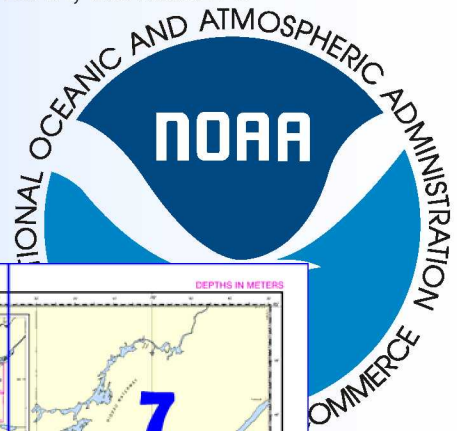
## Lake Ontario

(NOAA Chart 14800)



A reduced scale NOAA nautical chart for small boaters. When possible, use the full size NOAA chart for navigation.

- ✓ Complete, reduced scale nautical chart
- ✓ Print at home for free
- ✓ Convenient size
- ✓ Up to date with all Notices to Mariners
- ✓ United States Coast Pilot excerpts
- ✓ Compiled by NOAA, the nation's chartmaker.



Home Edition (not for sale)



### **What are Nautical Charts?**

Nautical charts are a fundamental tool of marine navigation. They show water depths, obstructions, buoys, other aids to navigation, and much more. The information is shown in a way that promotes safe and efficient navigation. Chart carriage is mandatory on the commercial ships that carry America's commerce. They are also used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters.

### **What is a BookletChart™?**

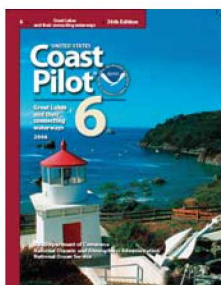
This BookletChart is made to help recreational boaters locate themselves on the water. It has been reduced in scale for convenience, but otherwise contains all the information of the full-scale nautical chart. The bar scales have also been reduced, and are accurate when used to measure distances in this BookletChart. See the Note at the bottom of page 5 for the reduction in scale applied to this chart.

Whenever possible, use the official, full scale NOAA nautical chart for navigation. Nautical chart sales agents are listed on the Internet at <http://www.NauticalCharts.NOAA.gov>.

This BookletChart does NOT fulfill chart carriage requirements for regulated commercial vessels under Titles 33 and 44 of the Code of Federal Regulations.

### **Notice to Mariners Correction Status**

This BookletChart has been updated for chart corrections published in the U.S. Coast Guard Local Notice to Mariners, the National Geospatial Intelligence Agency Weekly Notice to Mariners, and, where applicable, the Canadian Coast Guard Notice to Mariners. Additional chart corrections have been made by NOAA in advance of their publication in a Notice to Mariners. The last Notices to Mariners applied to this chart are listed in the Note at the bottom of page 7. Coast Pilot excerpts are not being corrected.



#### **[Coast Pilot 6, Chapter 5 excerpts]**

(9) **Lake Ontario** is the smallest and easternmost of the Great Lakes. The lake is comparatively deep; the greatest depth is 802 feet, and the average depth is 283 feet, much in excess of the greatest depth of Lake Erie. Lake Ontario is fed chiefly by the waters of Lake Erie by way of the Niagara River. The lake drains at its NE end into the St. Lawrence River. Welland Canal bypasses the falls and rapids of the Niagara River and provides a navigable

connection between Lake Ontario and the upper lakes.

(10) The great depth of the lake limits fluctuations of water level caused by winds and renders them comparatively small. The lake is generally free of outlying shoals and obstructions. The only significant shoals dangerous to navigation are those in the NE end of the lake in the approach to the St. Lawrence River and those of Niagara Bar off the

mouth of the Niagara River. The latter shoal is in the course of vessels plying between the Welland Canal and ports at the E end of the lake.

(21) The normal elevation of the lake surface varies irregularly from year to year. During the course of each year, the surface is subject to a consistent seasonal rise and fall, the lowest stages prevailing during the winter and the highest during the summer. In addition to the normal seasonal fluctuations, oscillations of irregular amount and duration are also produced by storms. Winds and barometric pressure changes that accompany squalls can produce fluctuations that last from a few minutes to a few hours. At other times, strong winds of sustained speed and direction can produce fluctuations that last a few hours or a day. These winds drive forward a greater volume of surface water than can be carried off by the lower return currents, thus raising the water level on the lee shore and lowering it on the windward shore. This effect is more pronounced in bays and at the extremities of the lake, where the impelled water is concentrated in a small space by converging shores, especially if coupled with a gradually sloping inshore bottom which even further reduces the flow of the lower return currents.

(22) Lake Ontario has less of a seiche problem than the other lakes. These irregular oscillations of the water surface are less pronounced in range because of the lake's smaller area and deep water along with a general symmetrical shape. There is also a lesser number of high- and low-pressure centers that pass directly over the lake.

(23) Navigation-season winds are strongest in autumn. Gales are most likely from October through December and blow out of the SW through NW. This is particularly true at the E end of the lake, where a funneling effect may occur with W and SW winds, which prevail throughout most of the year. As these winds encounter land, on either side of the lake, near the Thousand Islands, they are accelerated. A moderate blow in midlake often becomes a dangerous gale in this restricted area. Another local problem area is Mexico Bay, N of Oswego. This was once known as "the graveyard of Lake Ontario" because ships foundered there in NW through NE winds. In spring, northeasterlies and easterlies occasionally reach gale force throughout the lake. May through August is often the most troublefree time; windspeeds of 16 knots or less are encountered 80 percent or more of the time. The strongest sustained measured wind on the lake was west-north-westerly at 50 knots. This short period record (17 years) occurred in November. Since extremes along the shore range from 50 to 65 knots, it could be expected that an extreme on the lake could reach 90 knots. The prevailing SW and W winds are most persistent in winter and summer. Winds with northerly components are also common in winter as are those with southerly components in summer. Autumn and spring winds are more variable.

(24) While visibilities are restricted by rain, snow, haze, and smoke, fog is the most frequent and troublesome cause. On Lake Ontario, prolonged periods of rain and foggy weather are common when frontal systems moving into New York become stationary. In the spring, advection fog reduces visibilities to below 0.5 statute mile (0.4 nm) up to 10 percent of the time. It is usually worst during the morning hours. Along the shore, radiation fog is common in autumn under calm, clear nighttime skies. This fog sometimes drifts out over the water; it usually burns off by noon. Visibilities of 2.5 statute miles (2.2 nm) or less occur on about 10 to 13 days per month from October through March along the shore.

(25) While rough seas can be encountered in any season, they are most often a problem during fall and winter. From October through February, wave heights of 5 feet (1.5 m) or more can be expected 10 to near 20 percent of the time and 10 feet (3 m) or more up to 2 percent of the time. Extreme wave heights of 17 to 19 feet (5 to 6 m) have been encountered. Since strong winds over a long fetch of water are conducive to creating rough seas, strong winds out of the E and W quadrants over Lake Ontario are often danger signals. Sea conditions are best from May through July when waves of less than 1 foot occur 50 percent or more of the time.

(26) Thunderstorms can occur at any time, but are mostly a summertime problem. Along the shore, they are recorded on 20 to 30 days annually; about 75 percent or more brew up from May through

# Table of Selected Chart Notes

Corrected through NM Sep. 24/05  
Corrected through LNM Sep. 20/05

## CAUTION

Temporary changes or defects in aids to navigation are not indicated on this chart. See Local Notice to Mariners.  
During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

## AIDS TO NAVIGATION

Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.  
See Canadian List of Lights, Buoys and Fog Signals for information not included in the U.S. Coast Guard Light List.

## CAUTION

Limitations on the use of radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and National Geospatial-Intelligence Agency Publication 117.  
Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.  
Station positions are shown thus:  
○ (Accurate location)      ◐ (Approximate location)

## CAUTION

### SUBMARINE PIPELINES AND CABLES

Charted submarine pipelines and submarine cables and submarine pipeline and cable areas are shown as:



Additional uncharted submarine pipelines and submarine cables may exist within the area of this chart. Not all submarine pipelines and submarine cables are required to be buried, and those that were originally buried may have become exposed. Mariners should use extreme caution when operating vessels in depths of water comparable to their draft in areas where pipelines and cables may exist, and when anchoring, dragging, or trawling.  
Covered wells may be marked by lighted or unlighted buoys.

## NOTE B

Mariners should use caution as military craft may be operating within the area. For further information consult the U.S. Coast Guard Local Notice to Mariners.

Low Water Datum, which is the plane of reference for the levels shown on the above hydrograph, is also the plane of reference for the charted depths. If the lake level is above or below Low Water Datum, the existing depths are correspondingly greater or lesser than the charted depths.

## HORIZONTAL DATUM

The horizontal reference datum of this chart is North American Datum of 1983 (NAD 83), which for charting purposes is considered equivalent to the World Geodetic System of 1984 (WGS 84). Geographic positions referred to the North American Datum of 1927 do not require conversion to NAD 83 for plotting on this chart.

## RADAR REFLECTORS

Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

## NOTE C

This line marks the western limit of sector 4 and the eastern limit of sector 5 of the St. Lawrence Seaway Vessel Traffic Control System.

## POLLUTION REPORTS

Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

## NOAA WEATHER RADIO BROADCASTS

The NOAA Weather Radio stations listed below provide continuous weather broadcasts. The reception range is typically 20 to 40 nautical miles from the antenna site, but can be as much as 100 nautical miles for stations at high elevations.

Rochester, N.Y.	KHA-53	162.400 MHz (Chan. WX-2)
Buffalo, N.Y.	KEB-98	162.550 MHz (chan. WX-1)
Syracuse, N.Y.	WXL-31	162.550 MHz (Chan. WX-1)
Watertown, N.Y.	WXN-68	162.475 MHz (Chan. WX-3)

Additional information can be obtained at [nauticalcharts.noaa.gov](http://nauticalcharts.noaa.gov).

## WARNING

The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot 6 for details.

## CAUTION

Due to periodic high water conditions in the Great Lakes, some features charted as visible at Low Water Datum may be submerged, particularly in the near shore areas. Mariners should proceed with caution.

## COPYRIGHT

No copyright is claimed by the United States Government under Title 17 U.S.C. However, other nations may claim intellectual property rights on the compilation of data depicting the foreign waters shown on this chart.

## SOURCE DIAGRAM

Most of the hydrography identified by the letter "J" was surveyed by the U.S. Army Corps of Engineers prior to 1974. Other outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels currently maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, [United States Coast Pilot](#).

## CAUTION POTABLE WATER INTAKE

Vessels operating in fresh water lakes or rivers shall not discharge sewage, or ballast, or bilge water within such areas adjacent to domestic water intakes as are designated by the Commissioner of Food and Drugs (21 CFR 1250.93). Consult U.S. Coast Pilot 6 for important supplemental information.

## NOTE A

Navigation regulations are published in Chapter 2, U.S. Coast Pilot 6. Additions or revisions to Chapter 2 are published in the Notice to Mariners. Information concerning the regulations may be obtained at the Office of the Commander, 9th Coast Guard District in Cleveland, Ohio or at the Office of the District Engineer, Corps of Engineers in Buffalo, New York.  
Refer to charted regulation section numbers.

Sailing courses and limits indicated in magenta are recommended by the Lake Carriers Association and the Canadian Shipowners Association.

## CAUTION

This chart has been corrected from the Notice to Mariners (NM) published weekly by the National Geospatial-Intelligence Agency and the Local Notice to Mariners (LNM) issued periodically by each U.S. Coast Guard district to the dates shown in the lower left hand corner.

This nautical chart has been designed to promote safe navigation. The National Ocean Service encourages users to submit corrections, additions, or comments for improving this chart to the Chief, Marine Chart Division (N/CS2), National Ocean Service, NOAA, Silver Spring, Maryland 20910-3282.

**AUTHORITIES.** Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard, and Canadian authorities.

**BRIDGE AND OVERHEAD CABLE CLEARANCES.** When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.

**SYMBOLS AND ABBREVIATIONS.** For complete list of symbols and abbreviations see Chart No. 1

**AIDS TO NAVIGATION.** Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

**SAILING DIRECTIONS.** Bearings of sailing courses are true and distances given thereon are in statute miles between points of departure.

**PLANE OF REFERENCE OF THIS CHART** (Low Water Datum).....74.2 m.  
Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).

## SUPPLEMENTAL INFORMATION

Consult U.S. Coast Pilot 6 and Canadian Sailing Directions, Great Lakes, Vol. 1 for important supplemental information.

Information concerning Canadian Nautical Charts, Sailing Directions Tide Tables and other Government publications of interest to mariners may be obtained on request to the Dominion Hydrographer, Canadian Hydrographic Service, Department of Fisheries and Oceans, Ottawa.

For the St Lawrence Seaway Regulations and Circulars, special equipment, radio frequencies used in Traffic Control and related information, refer to THE SEAWAY HANDBOOK.

## MAGNETIC VARIATION

Magnetic variation curves are for 2005 derived from 2005 World Magnetic Model and accompanying secular change. If annual change is in the same direction as variation it is additive and the variation is increasing. If annual change is opposite in direction to variation it is subtractive and the variation is decreasing.

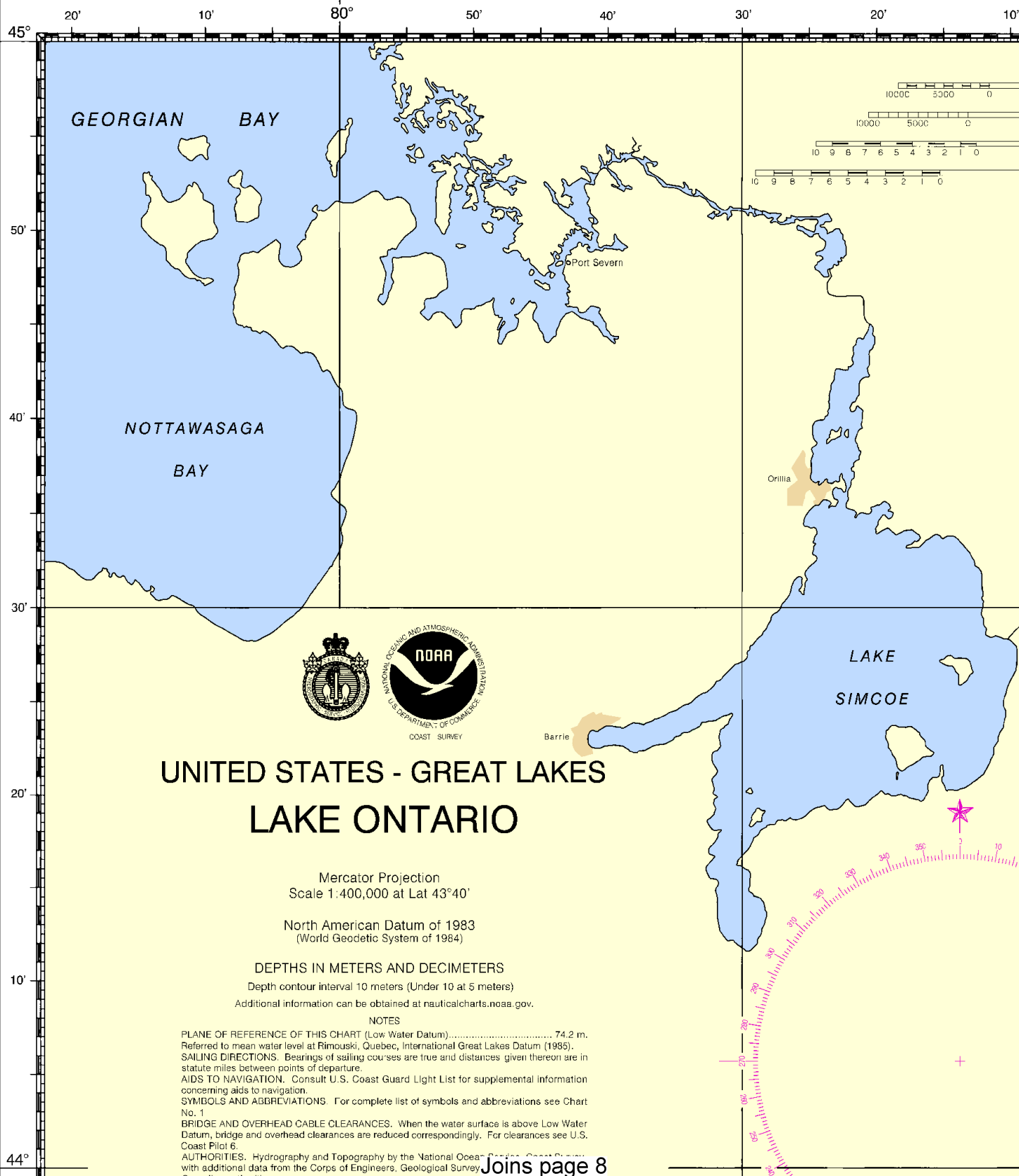
## PRINT-ON-DEMAND CHARTS

NOAA and its partner, OceanGrafix, offer this chart updated weekly by NOAA for Notices to Mariners and critical corrections. Charts are printed when ordered using Print-on-Demand technology. New Editions are available 5-8 weeks before their release as traditional NOAA charts. Ask your chart agent about Print-on-Demand charts or contact NOAA at 1-800-584-4683, <http://NauticalCharts.gov>, [help@NauticalCharts.gov](mailto:help@NauticalCharts.gov), or OceanGrafix at 1-877-56CHART, <http://OceanGrafix.com>, or [help@OceanGrafix.com](mailto:help@OceanGrafix.com).

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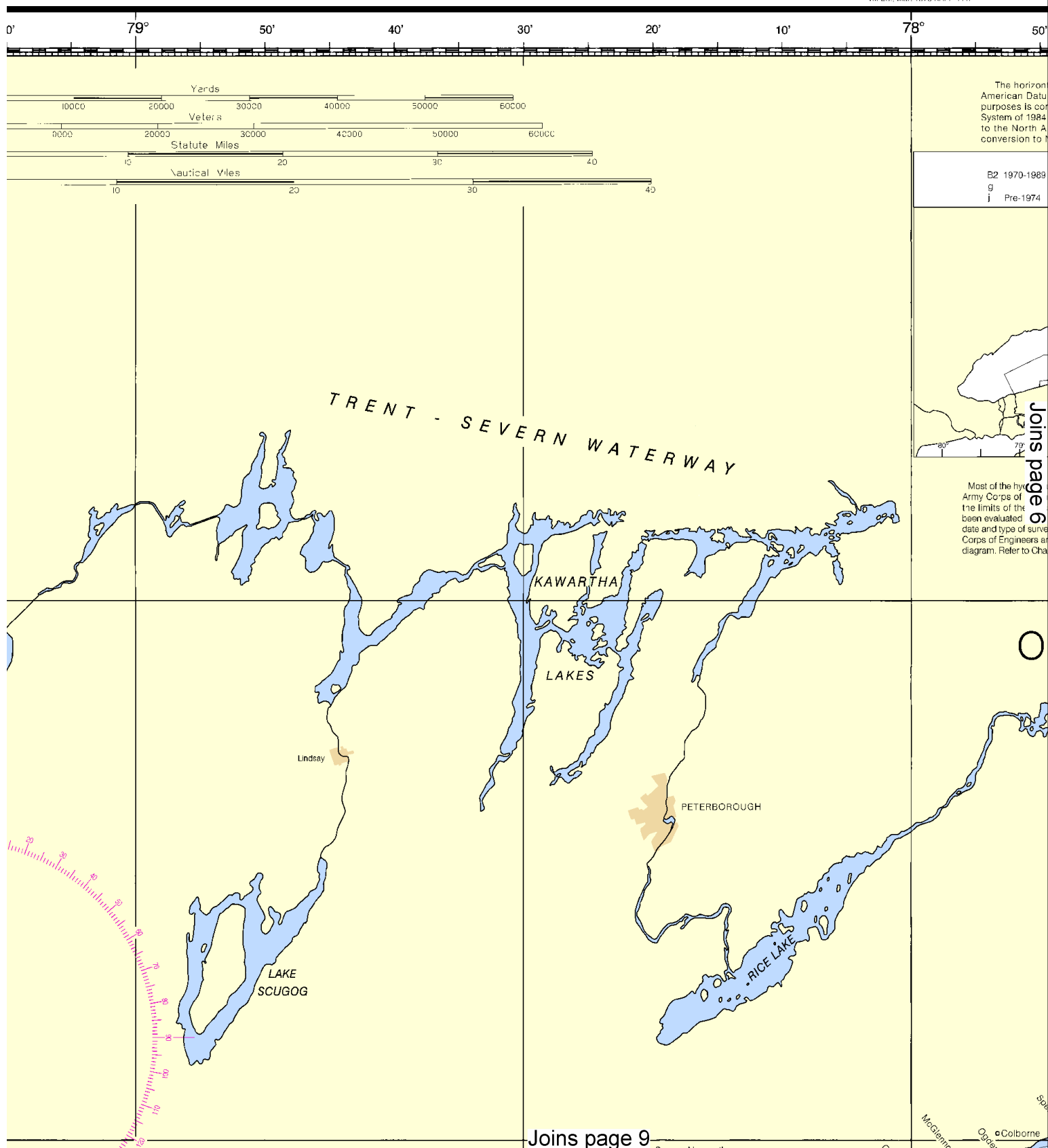
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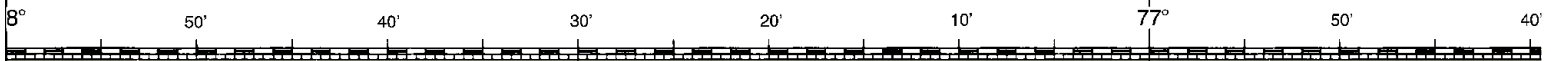
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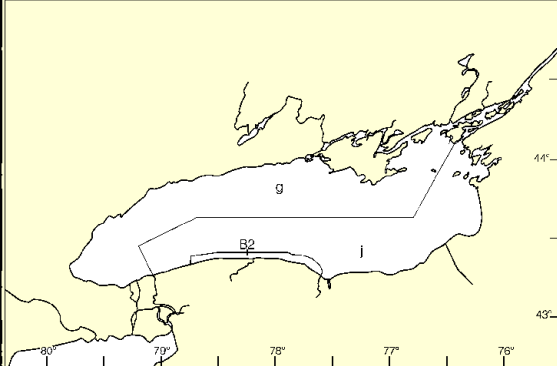
This BookletChart was reduced to 75% of the original chart scale.  
 The new scale is 1:533333. Barscales have also been reduced and  
 are accurate when used to measure distances in this BookletChart.



### HORIZONTAL DATUM

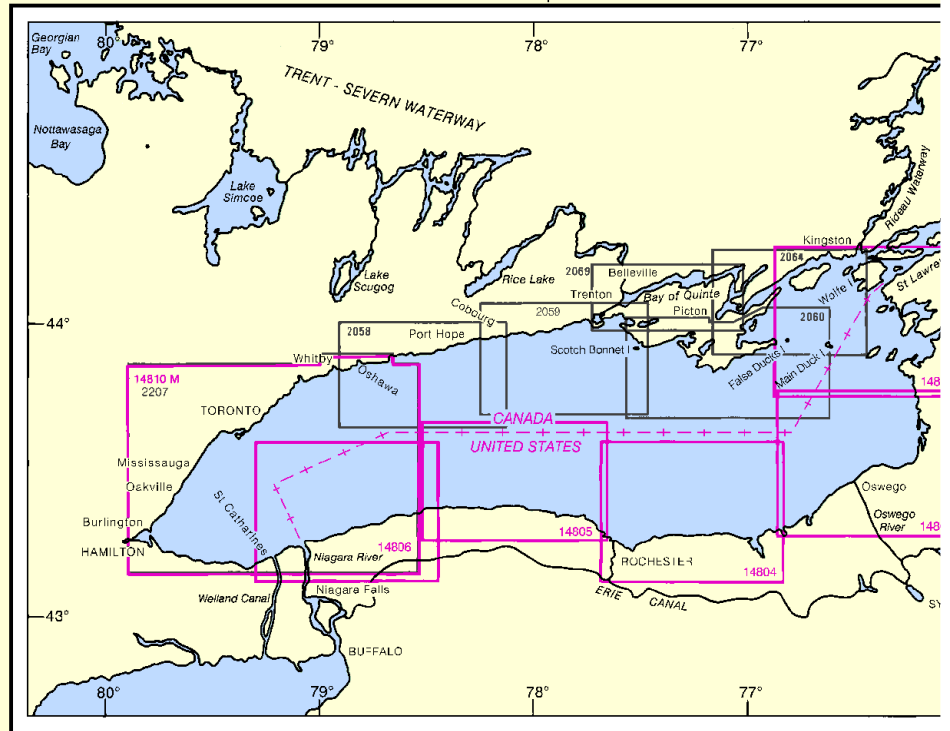
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SOURCE		
B2	1970-1989	NOS Surveys partial bottom coverage
g		Canadian Surveys
i	Pre-1974	Lake Survey Surveys partial bottom coverage



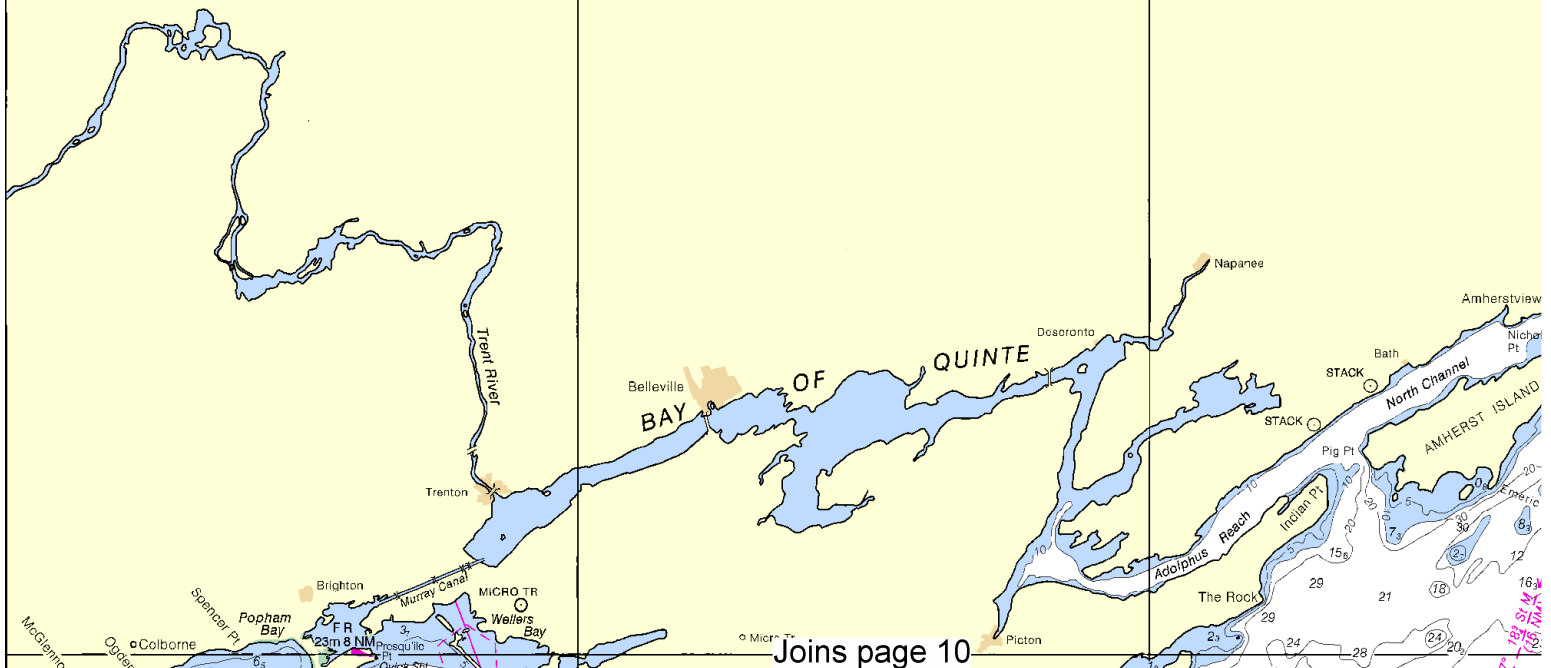
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Most of the hydrography identified by the letter "i" was surveyed by the U.S. Army Corps of Engineers prior to 1974. Other outlined areas represent the limits of the most recent hydrographic survey information that has been evaluated for charting. Surveys have been banded in this diagram by date and type of survey. Channels currently maintained by the U.S. Army Corps of Engineers are periodically resurveyed and are not shown on this diagram. Refer to Chapter 1, United States Coast Pilot.



Canadian charts are outlined in screened black and may be obtained from the Canadian Hydrographic Service.

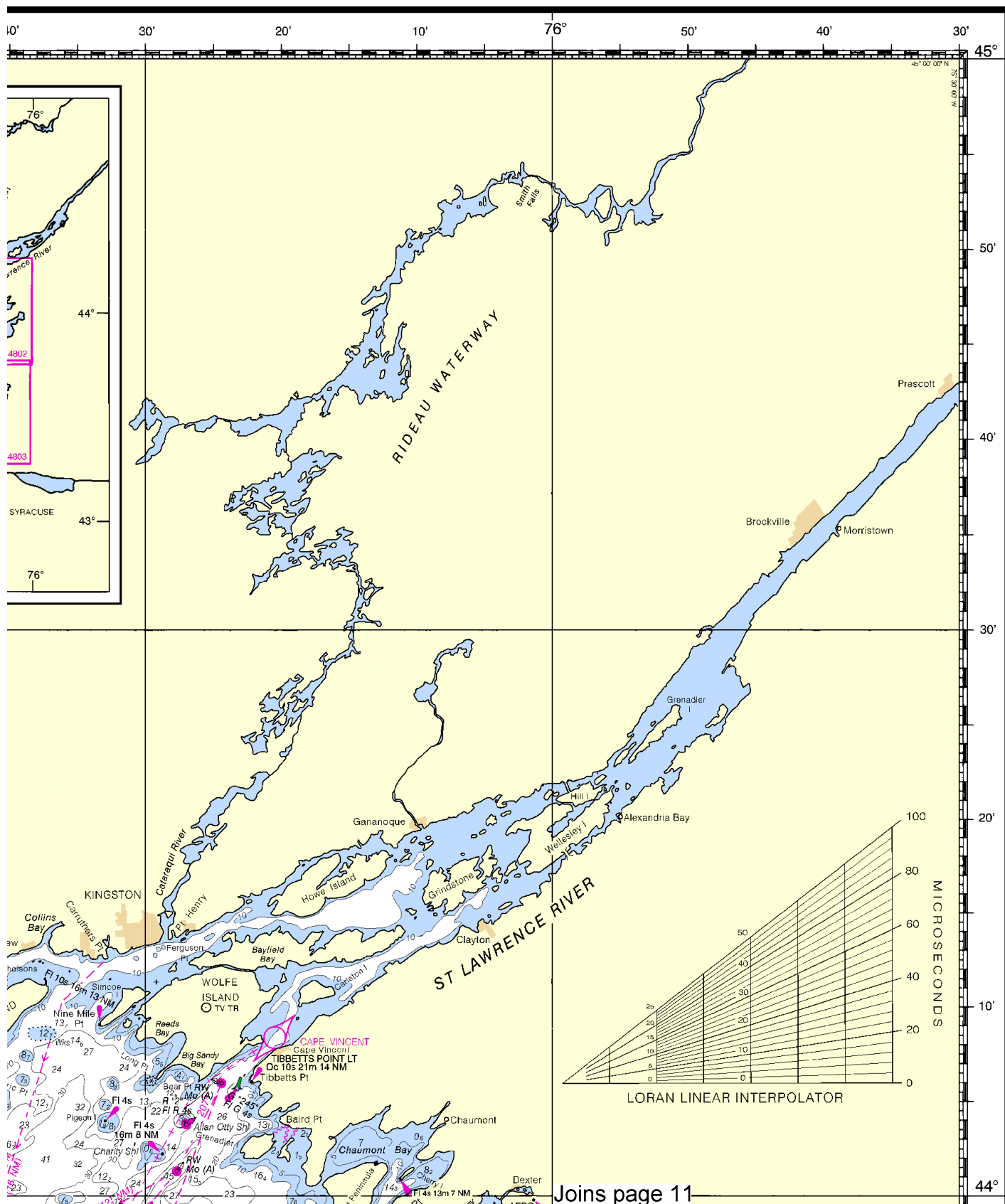
# O N T A R I O



Joins page 10



# DEPTHS IN METERS



Joins page 11

This BookletChart has been updated with: Coast Guard Local Notice To Mariners: 0710 2/16/2010,  
 NGA Weekly Notice to Mariners: 0910 2/27/2010,  
 Canadian Coast Guard Notice to Mariners: 0110 1/29/2010.

# UNITED STATES - GREAT LAKES LAKE ONTARIO

Mercator Projection  
Scale 1:400,000 at Lat 43°40'

North American Datum of 1983  
(World Geodetic System of 1984)

## DEPTHS IN METERS AND DECIMETERS

Depth contour interval 10 meters (Under 10 at 5 meters)

Additional information can be obtained at [nauticalcharts.noaa.gov](http://nauticalcharts.noaa.gov).

### NOTES

PLANE OF REFERENCE OF THIS CHART (Low Water Datum)..... 74.2 m.  
Referred to mean water level at Rimouski, Quebec, International Great Lakes Datum (1985).  
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AIDS TO NAVIGATION. Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.  
SYMBOLS AND ABBREVIATIONS. For complete list of symbols and abbreviations see Chart No. 1.  
BRIDGE AND OVERHEAD CABLE CLEARANCES. When the water surface is above Low Water Datum, bridge and overhead clearances are reduced correspondingly. For clearances see U.S. Coast Pilot 6.  
AUTHORITIES. Hydrography and Topography by the National Ocean Service, Coast Survey, with additional data from the Corps of Engineers, Geological Survey, U.S. Coast Guard, and Canadian authorities.

This chart was developed within the framework of International specifications in cooperation with the Canadian Hydrographic Service.

### RADAR REFLECTORS

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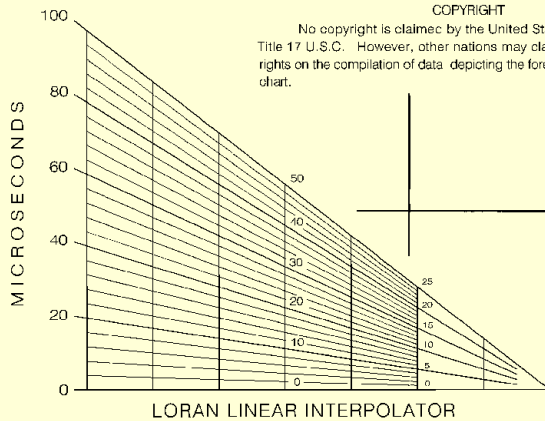
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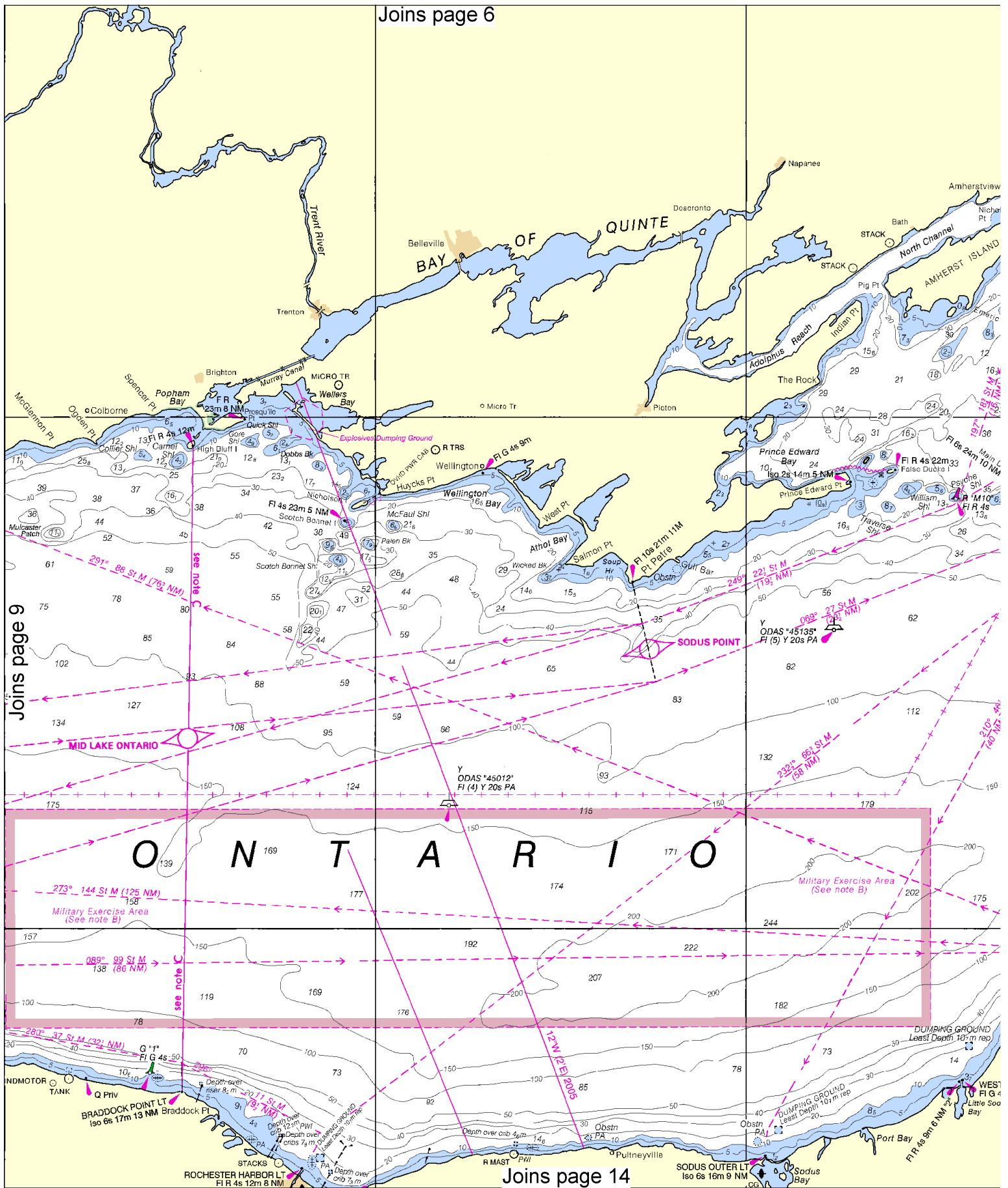
### COPYRIGHT

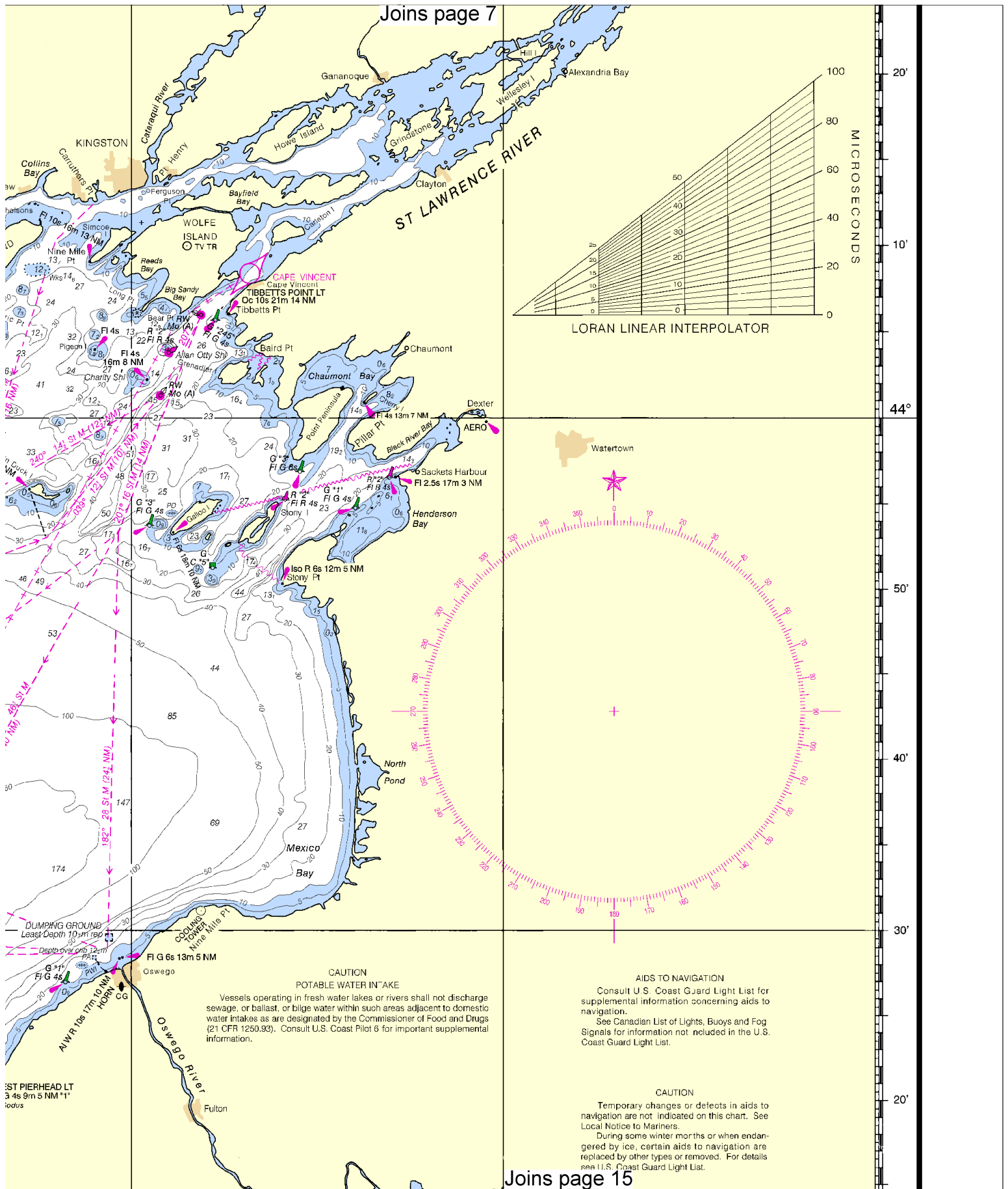
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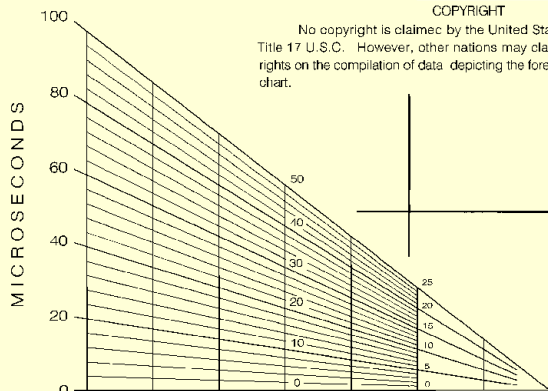




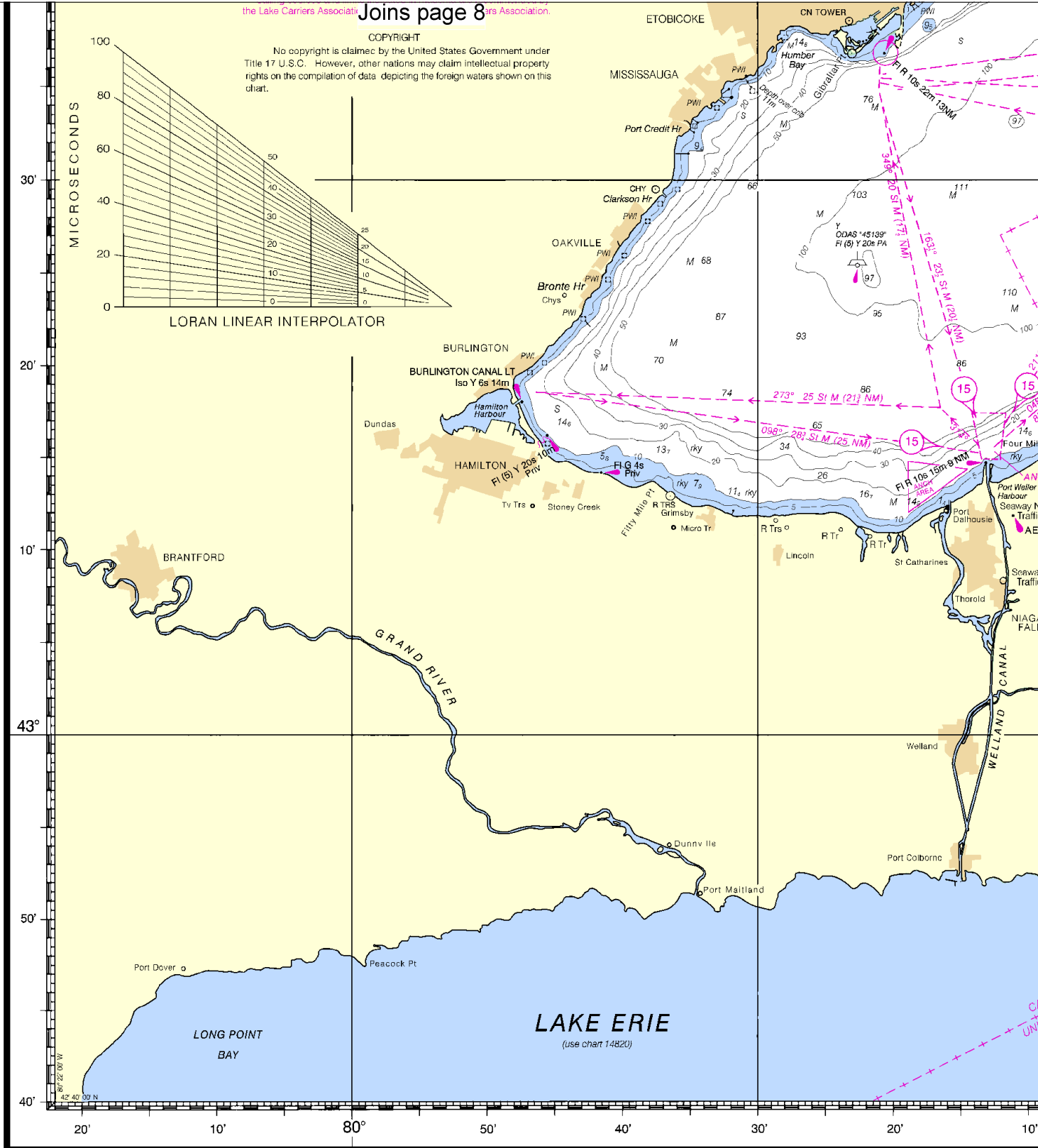


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LORAN LINEAR INTERPOLATOR



10th Ed., Sep./05 ■ Corrected through NM Sep. 24/05  
Corrected through LNM Sep. 20/05

14800

LORAN-C OVERPRINTED

CAUTION

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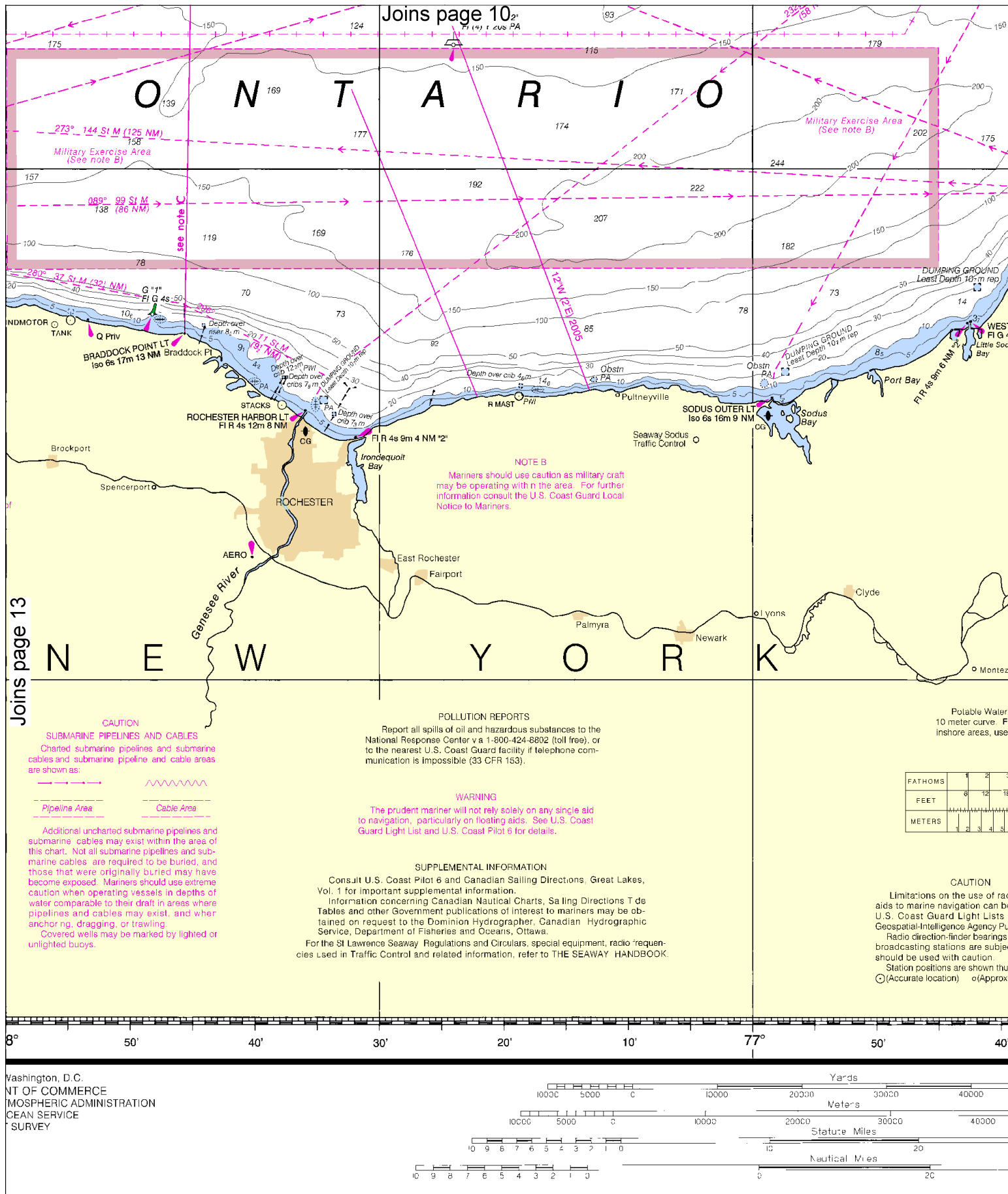
DEPTHS IN METERS

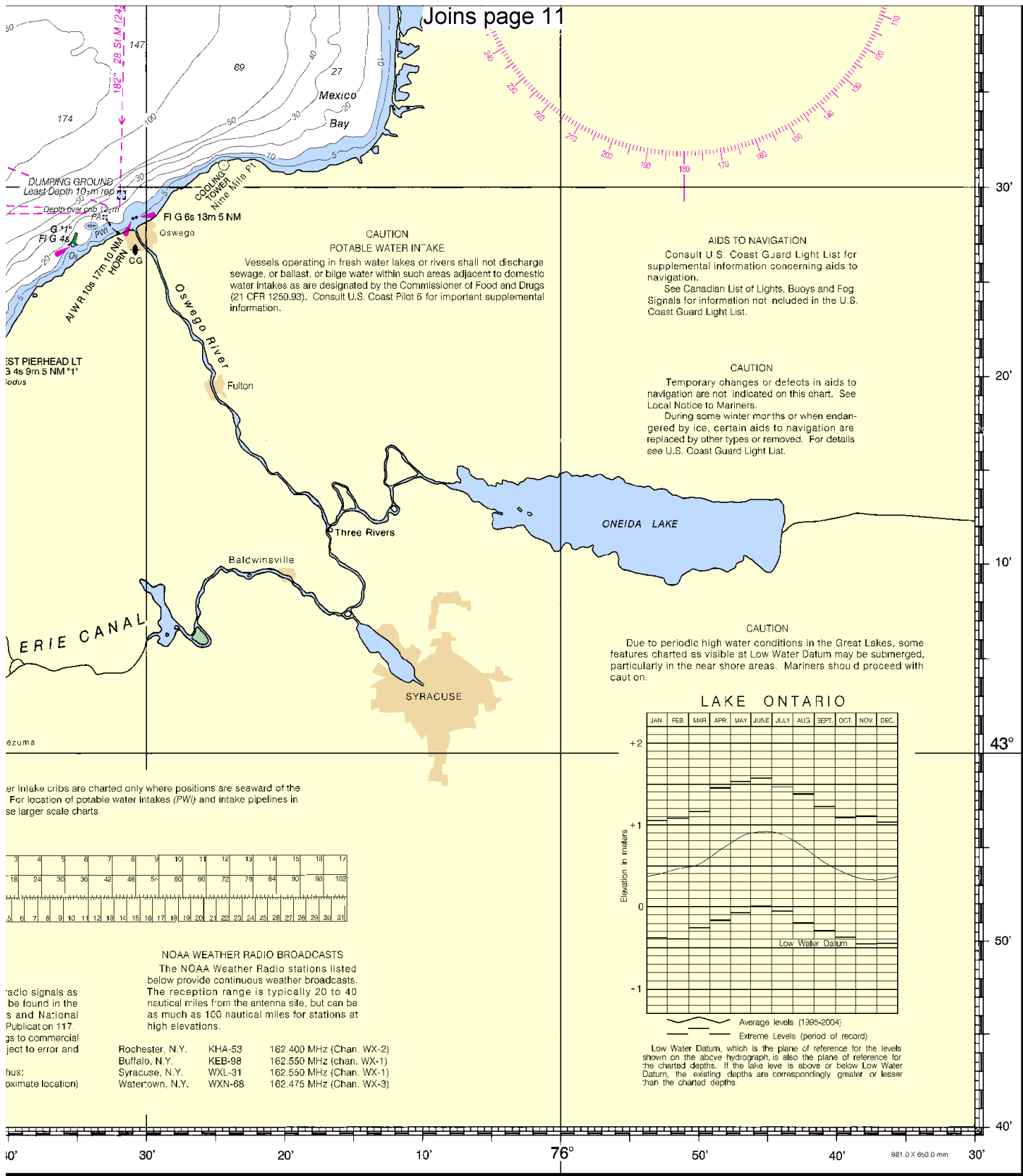
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ED. NO. 10

NSN 7642014010362  
NGA REFERENCE NO. 14XCO14800

Lake Ontario  
DEPTHS IN METERS - SCALE 1:400,000

14800  
LORAN-C OVERPRINTED



## EMERGENCY INFORMATION

### VHF Marine Radio channels for use on the waterways:

**Channel 6** – Inter-ship safety communications.

**Channel 9** – Communications between boats and ship-to-coast.

**Channel 13** – Navigation purposes at bridges, locks, and harbors.

**Channel 16 – Emergency, distress and safety calls** to Coast Guard and others, and to initiate calls to other vessels. Contact the other vessel, agree to another channel, and then switch.

**Channel 22A** – Calls between the Coast Guard and the public. Severe weather warnings, hazards to navigation and safety warnings are broadcast here.

**Channels 68, 69, 71, 72 & 78A** – Recreational boat channels.

### Distress Call Procedures

1. Make sure radio is on.
2. Select Channel 16.
3. Press/Hold the transmit button.
4. Clearly say: "MAYDAY, MAYDAY, MAYDAY."
5. Also give: Vessel Name and/or Description; Position and/or Location; Nature of Emergency; Number of People on Board.
6. Release transmit button.
7. Wait for 10 seconds – If no response Repeat MAYDAY Call.

### **HAVE ALL PERSONS PUT ON LIFE JACKETS !!**

**Mobile Phones** – Call 911 for water rescue.

**Coast Guard Search & Rescue** – 216-902-6117

**Coast Guard Search & Rescue** – 716-843-9527

**Canadian Coast Guard (RCC Trenton)** – 1-800-267-7270 or 613-965-3870

**NOAA Weather Radio** – 162.400 MHz, 162.425 MHz, 162.450 MHz, 162.475 MHz, 162.500 MHz, 162.525 MHz, 162.550 MHz.

**Getting and Giving Help** – Signal other boaters using visual distress signals (flares, orange flag, lights, arm signals); whistles; horns; and on your VHF radio. You are required by law to help boaters in trouble. Respond to distress signals, but do not endanger yourself.



## NOAA CHARTING PUBLICATIONS

**Official NOAA Nautical Charts** – NOAA surveys and charts the national and territorial waters of the U.S, including the Great Lakes. We produce over 1,000 traditional nautical charts covering 3.4 million square nautical miles. Carriage of official NOAA charts is mandatory on the commercial ships that carry our commerce. They are used on every Navy and Coast Guard ship, fishing and passenger vessels, and are widely carried by recreational boaters. NOAA charts are available from official chart agents listed at: [www.NauticalCharts.NOAA.gov](http://www.NauticalCharts.NOAA.gov).

**Official Print-on-Demand Nautical Charts** – These full-scale NOAA charts are updated weekly by NOAA for all Notice to Mariner corrections. They have additional information added in the margin to supplement the chart. Print-on-Demand charts meet all federal chart carriage regulations for charts and updating. Produced under a public/private partnership between NOAA and OceanGrafix, LLC, suppliers of these premium charts are listed at [www.OceanGrafix.com](http://www.OceanGrafix.com).

**Official Electronic Navigational Charts (NOAA ENC<sup>®</sup>)** – ENCs are digital files of each chart's features and their attributes for use in computer-based navigation systems. ENCs comply with standards of the International Hydrographic Organization. ENCs and their updates are available for free from NOAA at [www.NauticalCharts.NOAA.gov](http://www.NauticalCharts.NOAA.gov).

**Official Raster Navigational Charts (NOAA RNC<sup>™</sup>)** – RNCs are geo-referenced digital pictures of NOAA's charts that are suitable for use in computer-based navigation systems. RNCs comply with standards of the International Hydrographic Organization. RNCs and their updates are available for free from NOAA at [www.NauticalCharts.NOAA.gov](http://www.NauticalCharts.NOAA.gov).

**Official BookletCharts<sup>™</sup>** – BookletCharts<sup>™</sup> are reduced scale NOAA charts organized in page-sized pieces. The "Home Edition" can be downloaded from NOAA for free and printed. The Internet address is [www.NauticalCharts.gov/bookletcharts](http://www.NauticalCharts.gov/bookletcharts).

**Official PocketCharts<sup>™</sup>** – PocketCharts<sup>™</sup> are for beginning recreational boaters to use for planning and locating, but not for real navigation. Measuring a convenient 13" by 19", they have a 1/3 scale chart on one side, and safety, boating, and educational information on the reverse. They can be purchased at retail outlets and on the Internet.

**Official U.S. Coast Pilot<sup>®</sup>** – The Coast Pilots are 9 text volumes containing information important to navigators such as channel descriptions, port facilities, anchorages, bridge and cable clearances, currents, prominent features, weather, dangers, and Federal Regulations. They supplement the charts and are available from NOAA chart agents or may be downloaded for free at [www.NauticalCharts.NOAA.gov](http://www.NauticalCharts.NOAA.gov).

**Official On-Line Chart Viewer** – All NOAA nautical charts are viewable here on-line using any Internet browser. Each chart is up-to-date with the most recent Notices to Mariners. Use these on-line charts as a ready reference or planning tool. The Internet address is [www.NauticalCharts.gov/viewer](http://www.NauticalCharts.gov/viewer).

**Official Nautical Chart Catalogs** – Large format, regional catalogs are available for free from official chart agents. Page size, state catalogs are posted on the Internet and can be printed at home for free. Go to <http://NauticalCharts.NOAA.gov/mcd/ccatalogs.htm>.

**Internet Sites:** [www.NauticalCharts.NOAA.gov](http://www.NauticalCharts.NOAA.gov), [www.NOAA.gov](http://www.NOAA.gov), [www.TidesandCurrents.NOAA.gov](http://www.TidesandCurrents.NOAA.gov), [www.NOS.NOAA.gov](http://www.NOS.NOAA.gov).